

Organ and Tissue Transplantation

USSR

UDC 612.17+612.2157-089.843

9

PRIYMAK, A. A., GERASIMENKO, N. I., ANICHKOV, M. N., VIGDORCHIK, I. V.,
 AVERBAKH, M. M., DOBKIN, V. G., DEMIDOV, B. S., VIGDORCHIK, S. I., PAKHOMOVA,
 Z. I., PETUKHOVA, I. V., VAKSMAN, B. H., GALAYEVA, V. N., and KOZLOV, P. D.

"Use of an Isolated Heart-Lung Preparation in Experimental Transplant Surgery"

Moscow, Voenno-Meditsinskiy Zhurnal, No 2, 1971, pp 22-23

Abstract: Brief preliminary report on the use of an isolated heart-lung preparation with a working heart in more than 200 experiments on dogs, swine, calves, and sheep. The isolated heart-lung preparation is connected by special cannulas to the peripheral vessels of the recipient's systemic circulation. The isolated lungs inspire an air mixture under hyperventilation conditions. The parameters of electrical activity of the donor's and recipient's hearts, recipient's brain, hemodynamics, biochemical changes in blood, external respiratory function, blood gases, morphology of the tissues of the isolated heart-lung preparation (in various stages of survival) and of the recipient (following biological oxygenation) are investigated. The experiments showed that the physically stabilized heart-lung preparation when used as a biological oxygenator remains viable and ensures good lung and heart function for 10 to 15 hours. It is capable of adjusting automatically to the recipient's circulation and without traumatizing the formed elements

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PRIYMAK, A. A., et al., Voenno-Keditsinskiy Zhurnal, No 2, 1971, pp 22-23
of the blood maintains the necessary blood flow rate.

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USSR

UDC 669.71.053.4(038.8)

PEREVOSKIN, YU. L., FURMAN, A. A., KOGAN, V. M., VAKSMAN, P. A.,
and KARTALOV, B. V.

"Method for Preparing Solutions of Basic Aluminum Chlorides"

USSR Author's Certificate No 260624, filed 29 Feb 68, published
5 May 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11
G106)

Translation: A method is proposed for the preparation of solu-
tions of basic Al chlorides by mixing $Al(OH)_3$ with HCl and
subsequent neutralization of the obtained solution. To increase
the purity of product, the neutralization of the solution is
conducted with metallic Al in quantities, which ensure formation
of the basic Al chlorides of the composition $Al_n(OH)_{3n-1}Cl$, where
 $n = 1-3$.

1/1

172 007

UNCLASSIFIED

PROCESSING DATE--02OCT70

TITLE--PREPARATION OF SOLUTIONS OF BASIC ALUMINUM CHLORIDES -U-

AUTHOR--(05)-PEREVOZKIN, YU.L., FURMAN, A.A., KUGAN, V.M., VAKSMAN, P.A.,
KARTALOV, B.V.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 260,624

REFERENCE--OTKRYTIYA, IZJBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970 47(4)

DATE PUBLISHED--06JAN70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ALUMINUM HYDROXIDE, ALUMINUM CHLORIDE,
AQUEOUS SOLUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1993/0030

CIRC ACCESSION NO--A40113030

STEP NO--UR/0482/70/000/000/0000/0000

UNCLASSIFIED

2/2 007

CIRC ACCESSION NO--AA0113030

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SOLNS. OF BASIC AL CHLORIDES WERE

PREPD. BY MIXING $Al(OH)SUB3$ WITH HCL AND NEUTRALIZING THE RESULTING

SOLN. WITH ENOUGH METALLIC AL TO GUARANTEE THE FORMATION OF $Al SUBN (OH)$

$SUB3N-1$ CL, WHERE N WAS 1-3.

UNCLASSIFIED

89

USSR

YAKSMAN, T. F., DUDKIN, L. M.

UDC: 51

"Mathematical Economics Problems With Explicit and Implicit Beak"

Tr. 4-y Zimn. shkoly po mat. programmir. i smezh. voprosam, 1971, VYP. 1
(Works of the Fourth Winter School on Mathematical Programming and Related
Problems, 1971, No 1), Moscow, 1971, pp 166-174 (from RZh-Kibernetika, No
6, Jun 72, Abstract No 6V445)

Translation: A beak is defined as the solution of a system of linear ine-
qualities of intersectoral balance which is smaller with respect to all
components than the other solutions of this system.

USSR

VAKSMAN, V. S.

UDC: 512.25/.26+519.3:330.115

"On One Class of Problems of Separable Programming and Operations on Functions Related to This Class"

Tr. 3-y zimney shkoly po mat. programir. i smezhnym vopr., 1970, vyp. 1
(Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 1), Moscow, 1970, pp 104-123 (from RZh-Kibernetika, No 7, Jul 71, Abstract No TV606)

[No abstract]

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USSR

UDC: 512.25/.26+519.3:330.115

VAKSMAN, V. S., GAL'PERIN, A. M.

"A Modified Kelly Method of Solving Descriptive Piecewise-Linear Problems of Convex Programming"

Tr. 3-y Zimney shkoly po mat. programir. i smezhnym vopr., 1970. Vyp. 1
(Works of the Third Winter School on Mathematical Programming and Related Problems, 1970, No 1), Moscow, 1970, pp 124-133 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V609)

[No abstract]

1/2 027
TITLE--CHANGE IN THE STRUCTURE OF POLYETHYLENE DURING WELDING -U-
AUTHOR--(02)--ORLOV, E.B., VAKULA, V.L.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN. SER. B 1970, 12(2), 119-23
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--WELDING, POLYETHYLENE, POLYMER STRUCTURE, PLASTIC FILM,
COHESION STRENGTH, MOLECULAR WEIGHT, X RAY DIFFRACTION STUDY, MICROSCOPY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1984/0947
CIRC ACCESSION NO--AP0055645
STEP NO--UR/0460/70/012/002/0119/0123
UNCLASSIFIED

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CIRC ACCESSION NO--AP0055645
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT. THE WELDING OF POLYETHYLENE (1)
FILMS GIVES SEAMS WHICH BREAK UNDER STRESS NOT AT THE ORIGINAL JOINT,
BUT CLOSE TO IT (COHESION BREAKING). THE COHESION STRENGTH OF WELDS AT
BREAK DECREASES WITH INCREASING MELT FLOW INDEX OF 1, I.E., WITH THE
DECREASE IN THE MOL. WT. X RAY DIFFRACTION AND I D. DETS. SHOWED THAT
THE CRYSTALLINITY OF 1 DECREASES FROM 60-5PERCENT TO 58-9PERCENT AFTER
WELDING. MICROSCOPY CONFIRMED AN INCREASE OF THE AMORPHOUS REGIONS AT,
AND NEAR, THE WELD LOCATION.

UNCLASSIFIED

USSR

UDC: 539.374

VAKULENKO, A. A., KACHANOV, M. L.

"Microstresses in the Theory of Plasticity"

V sb. Probl. mekhan. tverd. deformir. tela (Problems in the Mechanics of a Deformable Solid--collection of works), Leningrad, "Sudostroyeniye", 1970, pp 99-103 (from RZh-Mekhanika, No 9, Sep 70, Abstract No 9V326)

Translation: It is known that in many instances a continuous elastic body with "slits" (singularities of the displacement field) of the appropriate kind may act as a model for a crystal whose lattice contains dislocations. In this paper, such a model is considered as a "standard" -- a body whose averaged properties should play the part of the localized properties of the medium in the macroscopic theory of plasticity. It is shown that in the case of a sufficiently well substantiated algorithm for such averaging, tensors which characterize "inherent" stresses due to dislocations should show up in the macroscopic theory together with the tensor for dislocation density. Macroscopic strengthening is directly associated with the change in tensors, which are determined in turn by the dislocation density distribution. Authors' abstract.

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1/2 017
UNCLASSIFIED
TITLE--SOME PROBLEMS OF THE CONTINUAL THEORY OF DISLOCATIONS --U-
PROCESSING DATE--20NOV70
AUTHOR--(02)--VAKULENKO, A.A., MARKOV, K.Z.
COUNTRY OF INFO--USSR
SOURCE--VESTNIK Leningradskogo Universiteta, No 7, Matematika, Mekhanika,
ASTRONOMIYA, 1970, NR 2, PP 74-87
DATE PUBLISHED-----70
SUBJECT AREAS--MATHEMATICAL SCIENCES
TOPIC TAGS--ENTROPY, THERMODYNAMICS, TENSOR ANALYSIS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1389
STEP NO--UR/0043/70/000/002/0074/0087
CIRC ACCESSION NO--AP0133341
UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AP0133341
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT. MEDIA WITH CONTINUOUS FIELDS OF DISLOCATIONS ARE TREATED IN THIS PAPER. SOME DETAILS OF GEOMETRY OF DEFORMATION ARE SPECIFIED HERE. IT IS SHOWN FOR INSTANCE, THAT THE COINCIDENCE OF THE THREE VALENT TENSOR OF DISLOCATION DENSITY AND THE TENSOR OF TORSION (AS KRONER AND OTHER AUTHORS HAVE CLAIMED) IS NOT ABSOLUTELY TRUE. IN FACT, THERE TENSORS COINCIDE ONLY TO WITHIN THE MULTIPLIER, WHICH REPRESENTS THE DERIVATION OF ONE OF THE BASIC DIFFEOMORPHISMS. THE DESCRIPTION OF THE INTERACTION OF DISLOCATIONS IN THE CONTINUAL THEORY OF DISLOCATIONS IS THE MAIN PROBLEM OF THIS PAPER. IT IS PROVED THAT THE SPECIFIC "FAR INFLUENCE" OF DISLOCATIONS LEADS TO THE DEPENDENCE OF THE FIELD OF ENERGY DENSITY ON GRADIENTS OF THE FIELD OF THE TENSOR OF DISLOCATION DENSITY WITHIN THE CONDITION OF LOCAL USE OF THE BASIC NOTIONS OF THERMODYNAMICS. THE CORRESPONDING SPECIFICATION OF LOCAL EQUATIONS OF ENERGY AND ENTROPY BALANCE ARE GIVEN HERE.

UNCLASSIFIED

USSR

UDC 621.378.9:621.395.623

VAKULENKO, A. M., DIVIL'KOVSKIY, I. M., KOVALEVSKIY, D. V., SMIRNOV, N. V.
"The TO-2 Optical Telephone"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 4, "Sovetskoye Radio",
1971, pp 134-136

Abstract: The paper describes the TO-2 telephone system based on a gallium arsenide semiconductor laser of the injection type. The system has a line-of-sight range of about 5 km, which can be increased by separating the transmitting and receiving channels, thus eliminating the beam splitter used in the common-channel transceiver, which introduces a power loss of about 75 percent. The system is designed for simultaneous two-way communication. A working model of the TO-2 system was put on display in the "Physics" pavillion of the Exhibition of Achievements of the National Economy in 1970. The transmitting laser has a threshold current of 30-50 amps, and emits on a wavelength of the order of 0.9 micron. Power consumption is no more than 3.5 W at a supply voltage of 9 V. Two figures, bibliography of three titles.

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USSR

VAKULENKO, I. N., SINEKOP, Yu. S.

UDC 537.521

"Investigation of the Noise Properties of a Glow-Discharge in Crossed Electrical and Magnetic Fields"

Kiev. politekhn. in-ta. Ser. radioelektron (Kiev Polytechnical Institute. Radioelectronics Series), 1970, No 7, pp 20-22 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1A113)

Translation: The results are presented of an experimental investigation of the noise of a glow-discharge in crossed electrical and magnetic fields, conducted on an electrode system of the inverted magnetron type in an atmosphere of residual gases with continuous pumping in the pressure range 10^{-10} to 10^{-3} mm mercury. V. M.

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USSR

UDC 621.315.592

VAKULENKO, O. V., GOVOROVA, O. A., SERGEYEV, O. T., Kiev State University imeni
T. G. Shevchenko

"Effect of Ultraviolet Illumination on Infrared Absorption in SiC(6H)"
Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 956-957

Abstract: Analysis of the temperature dependence of the Hall effect in n-type SiC(6H) gives a value of 0.095 electron volts for the nitrogen activation energy E_d [G. A. Lomakina, et al., FTT, No 12, 2918, 1970]. Along the long-wave side of the lattice bands at the temperature of liquid nitrogen a structure is observed which can be caused by photoionization of the impurity atoms (nitrogen). Ultraviolet illumination was used to discover the mechanism of this absorption. Graphs are presented showing the increase in optical density in the presence of illumination. The increase in absorption on irradiation of SiC(6H) crystals by photons with an energy exceeding the width of the forbidden zone can be explained by the increase in concentration of neutral donors as a result of capture of the nonequilibrium electrons by ionized centers. The proposed model does not explain the absence of an additional absorption band connected with the transition to a higher excited state ($\nu \sim 720 \text{ cm}^{-1}$) or the nature of the weak band for $h\nu \approx 0.064$ electron volts.

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USSR

UDC 621.317.799:537.311.33

VAKULENKO, O. V.

"Use of Tables for Determination of the Optical Constants of Semiconductors of Two Transmission Values"

Ispol'zovaniye tablits dlya opredeleniya opticheskikh postoyannykh poluprovodnikov po dvuma znacheniyam propuskaniya (cf. English above. Editorial Boards of the Journal "Fiz. i tekhn. poluprovodnikov," AS, USSR), Leningrad, 1970, 8 p, bib. 3 titles [No 2454-71 DEP] (from RZh-Electronika i yeye primeneniye, No 5, May 1971, Abstract No 5881 DEP)

Translation: A method is described for simultaneous determination of the absorption factor K and reflection R with respect to the transmissions T of specimens of two different thicknesses. It is also possible to use the tables presented in abridged form for direct determination of K from the T of one specimen with a known R . Summary.

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USSR

BOBOROV, Yu. K., VAKULENKO, S. Ye.

UDC 533.95:538.4

"On Calculating the Drop in Ionization Energy and Pressure Due to Coulomb Interaction in an Air Plasma"

Vestn. Kiyev. politekhn. in-ta. Ser. elektroenergetiki (Herald of Kiev Polytechnical Institute. Electroenergetics Series), 1972, No. 9, pp 18-23 (from RZh-Fizika, No 11, Nov 72, Abstract No 11G70)

Translation: The necessity for taking into account Coulomb interaction in a plasma in calculating the composition of an air plasma on the basis of the Saha equation is discussed. The Debye radius for screening and the drop in ionization energy and pressure in an air plasma was calculated in the temperature range $T = 10^4 \sim 10^5$ K and the pressure range $P = 0.01-100$ atm. A system of equations was derived, including the Saha equation, the Dalton equation, the equation for macroneutrality and the relative content of nitrogen and oxygen in the air. The numerical solution of the equation considering the drop in ionization energy and pressure determines a new composition for the air plasma.

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1/2 009
TITLE--BLAST FURNACE HEARTH COMBUSTION CONTOURS AND VARIATION IN THE
INDIVIDUAL TUYERE PARAMETERS -U-
AUTHOR--(05)-VAKULENKO, V.KH., MOROZOV, V.M., SMETANIN, M.V., MAKHANEK,
N.G., KONOVALOV, K.D.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHER. ZAVED., CHERN. MET. 1970, 13(2), 24-8
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--BLAST FURNACE, STEEL TUBE, CARBON DIOXIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/1406
CIRC ACCESSION NO--AT0120199
STEP NO--UR/0148/70/013/002/0024/0028
UNCLASSIFIED

2/2 009
CIRC ACCESSION NO--ATO120199 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHAPE AND ARRANGEMENT OF
TUYERES AND THEIR EFFECT ON BLAST FURNACE OPERATION WERE STUDIED. WATER
COOLED TUBES WERE INTRODUCED WHICH WERE ABLE TO COLLECT SAMPLES OF GASES
AT A VARIETY OF POINTS. THE COMBUSTION ZONE WAS MORE DEVELOPED IN THE
VERTICAL DIRECTION THAN IN THE HORIZONTAL. TO PROMOTE THE MORE
FAVORABLE HORIZONTAL DIRECTION, ELLIPTICAL AND SLIT SHAPED TUYERES WERE
TRIED; HOWEVER, THE NEED FOR CO AND DIFFICULTIES IN PLACING TUYERES IN
EXACTLY HORIZONTAL POSITION MADE THIS CHANGE IMPRACTICAL. FURTHERMORE
IT WAS TRIED TO JOIN INDIVIDUAL COMBUSTION CHAMBERS BY INCREASING THE
NO. OF TUYERES FROM 10 TO 12; HOWEVER, THE RING SHAPED COMBUSTION ZONE
WHICH WAS FORMED WAS VERY NARROW AND THE CO SUB2 CONTENT IN THE GASES
INCREASED FROM 4-6PERCENT AT THE FURNACE WALLS TO 16PERCENT CLOSER TO
THE AXIS OF THE FURNACE.
SVERDLOVSK, USSR.
FACILITY: URAL. POLITEKH. INST.,
PROCESSING DATE--23OCT70

UNCLASSIFIED

1/3 033
UNCLASSIFIED
TITLE--STUDY OF COSMIC RAYS AND THE RADIATION BELTS BY A VERTICAL SPACE
PROBLE -U-
AUTHOR--(05)--VERNOV, S.N., VAKULOV, P.V., KUZNETSOV, S.N., LOGACHEV, YU.I.,
LOPATINA, G.B.
COUNTRY OF INFO--USSR
SOURCE--MOSKOW, KOSMICHESKIYE ISSLEDOVANIYA, VOL VIII, NO 3, 1970, PP
408-417
DATE PUBLISHED--70
SUBJECT AREAS--ATMOSPHERIC SCIENCES, MISSILE TECHNOLOGY, PHYSICS
TOPIC TAGS--COSMIC RAY, RADIATION BELT, UPPER ATMOSPHERE, SOUNDING ROCKET,
ELECTRON SPECTRUM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0554
CIRC ACCESSION NO--AP0132740
STEP NO--UR/0293/70/008/003/0408/0417
UNCLASSIFIED

2/3 033

CIRC ACCESSION NO--AP0132740
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--20NOV70

PROCESSING OF DATA OBTAINED USING A VERTICAL SPACE PROBE LAUNCHED ON 12 OCTOBER 1967 FOR OBTAINING AN INSTANTANEOUS CROSS SECTION OF THE UPPER ATMOSPHERE TO AN ALTITUDE OF ABOUT 4,000 KM. WITH RESPECT TO COSMIC RAYS: A) IT WAS POSSIBLE TO OBTAIN THE VERTICAL VARIATION OF COSMIC RAYS AT 1.7 LESS THAN L LESS THAN 2.2, WHICH FOR THE MOST PART CAN BE ATTRIBUTED TO CHANGE IN GEOMETRIC AND MAGNETIC SCREENING OF THE EARTH. B) IT WAS POSSIBLE TO DETERMINE THE COSMIC RAY MULTIPLICATION FACTOR FOR THE COUNTER SITUATED ON THE SURFACE OF THE OBJECT, WITH A MEAN LENGTH OF THE COSMIC RAY PATH IN THE MATTER OF THE OBJECT SIMILAR TO 50 G-CM PRIME2 THE COSMIC RAY MULTIPLICATION FACTOR ATTAINS VALUES SIMILAR TO 20PERCENT. C) THERE IS A MARKED ANISOTROPY OF THE FLUX OF ALBEDO COSMIC RAYS ATTAINING SIMILAR TO 40PERCENT. ACCORDINGLY, IN AN ANALYSIS OF COSMIC RAY DATA OBTAINED OVER THE ATMOSPHERE BY USE OF DETECTORS HAVING A GREAT LENGTH AND SMALL DIAMETER IT IS NECESSARY TO TAKE INTO ACCOUNT DETECTOR ORIENTATION RELATIVE TO THE MAGNETIC LINE OF FORCE. WITH RESPECT TO THE RADIATION BELTS: A) IT WAS POSSIBLE TO MEASURE THE ELECTRON SPECTRUM AT DIFFERENT L SHELLS IN THE RANGE 2 LESS THAN L LESS THAN 3. FOR A SPECTRUM IN THE FORM (IN GREATER THAN E SUBE) SIMILAR TO EXPIMINUS E SUBE -E SUBO) IN THE ENERGY RANGE 40 LESS THAN E SUBE LESS THAN 300 KEV THE SPECTRUM IS SOFTENED WITH AN INCREASE IN L, WHEREAS FOR ENERGIES 300 LESS THAN E SUBE LESS THAN 600 KEV IT BECOMES HARDER. B) A STUDY WAS MADE OF THE PITCH ANGLE DISTRIBUTION OF ELECTRONS WITH E SUBE LESS THAN 40 KEV AT DIFFERENT L SHELLS (L EQUALS 2.2, 2.6, 3.0).

UNCLASSIFIED

373 033
CIRC ACCESSION NO--AP0132740 UNCLASSIFIED
ABSTRACT/EXTRACT--APPROXIMATION OF THE PITCH ANGLE DISTRIBUTION BY THE
FUNCTION $M(\alpha) \sin \alpha$ GIVES FOR THE LEAKING PARTICLES AT L
EQUALS 2.2 N VALUES FROM SIMILAR TO 4 TO SIMILAR TO 10, WHEREAS FOR L
EQUALS 2.6 AND 3.0 N SIMILAR TO OR EQUAL TO 1. FOR NONLEAKING PARTICLES
 N SIMILAR TO OR EQUAL TO 1 AT ALL L. C) AN INCREASE IN THE FLUXES OF
LEAKING ELECTRONS WITH AN INCREASE IN L WAS DISCOVERED.

PROCESSING DATE--20NOV70

UNCLASSIFIED

USSR

UDC: 550.837

VAKUL'SKIY, A. A., KAMENETSKIY, F. M., LABZHINSKIY, S. I., LUTSYSHIN, A. S.,
MIZYUK, L. Ya., TIMOFFEYEV, V. M., YAKUBOVSKIY, Yu. V., Institute of Physical
Mechanics, Academy of Sciences of the Ukrainian SSR

"A Device for Aerogeolectric Prospecting"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 9, Mar 72, Author's Certificate No 331356, Division G, filed 12 May 69,
published 7 Mar 72, p 144

Translation: This Author's Certificate introduces a device for aerogeo-
electric prospecting by the method of transient processes. The device con-
sists of a current pulse generator which contains a source of direct current,
a master multivibrator, a frequency divider, a power amplifier, a current
commutator and an oscillator tank circuit; and a meter which contains a
receiving tank circuit, a preamplifier, a gating module, an accumulator,
a DC amplifier, a registration unit, and a circuit for control and synchro-
nization of the gating module. As a distinguishing feature of the device,
interference suppression is improved, the measurement error is reduced and
the stability of compensation of transient processes caused by the conduc-

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USSR

VAKUL'SKIY, A. A. et al., USSR Author's Certificate No 331356

tive fuselage of the aircraft is increased by connecting coincidence gates in the current pulse generator between the frequency divider and power amplifier. Some inputs of the coincidence gates are connected to the output of the master multivibrator, and the other inputs are connected to the outputs of the frequency divider. A band filter is connected in the meter between the preamplifier and the gating module, and a secondary gating block is connected between the pulse amplifier and the DC amplifier. The secondary gating block is connected to the control and synchronization circuit, and is made in the form of parallel-connected compensation and measurement strobe pulse multivibrators which are connected through a broad strobe pulse shaping multivibrator to the primary gating module. Multivibrators for delay and shaping of narrow strobe pulses [are connected] to coincidence gates with some inputs connected to the outputs of the oscillator frequency divider, while the other inputs are connected to the multivibrator for shaping narrow strobe pulses, and the outputs of these coincidence gates are connected to the secondary gating block.

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USSR

UDC 550.837.73

KAMENETSKIY, F. N., YAKUBOVSKIY, YU. V., MIZYUK, L. YA., VAKUL'SKIY, A. A.,
TIMOFEYEV, V. M., MAKAGONOV, P. P., LUTSYSHIN, A. S., BOYKO, V. P.

"Device for Inductive Aeroelectric Exploration by the Transient Process Method"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki, No 16,
8 May 70, p 61, Patent No 270123, Filed 19 Apr 65

Translation: 1. This Author's Certificate introduces a device for inductive
aeroelectric exploration by the transient process method. The device comprises
a pulse generator, a generator circuit, a receiving element, a control unit,
amplifiers, commutators, storage elements, and a recording unit. It is dis-
tinguished by the fact that in order to improve the noiseproofness of transient
process measurements in flight, the generator circuit is executed in the form
of a system made up of the basic generator circuit placed between the aircraft
and the receiving element at equal distances from both and two auxiliary cir-
cuits arranged one directly on the hull of the aircraft and the other, on the
case of the receiving element.

2. A second device like item 1 is introduced, but it is distinguished
by the fact that in order to obtain the required power in the basic generator
circuit directly from the low-voltage on-board network and also to increase
the steepness of the pulse fronts, the basic generator circuit is executed in

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KAMENETSKIY, F. M., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obratzsy,
Tovarnyye Znaki, No 16, 8 May 70, Patent No 270123, Filed 19 Apr 65
the form of several sections commuted by individual switches with a common
control circuit.

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USSR

UDC 542.91+547.752

POGOSYAN, S. A., TERSYAN, A. G., YAKUNTS, O. I., TATEVOSYAN, G. T., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences of the ArmSSR, Yerevan

"Indole Derivatives. XLIII. 2(3)-Chloro-1,4,4a,5,7,8,13b,13c-octahydro-13H-benz(g)indolo(2,3-a)indolizine and 2(3)-Chloro-1,4,4a,5,7,8,9,14,14b,14c-decahydroisoindolo(1,2-a)indolo(2,3-c)asepine"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 26, No 2, 1973, pp 153-158

Abstract: The paper describes synthesis of 2(3)-chloro-1,4,4a,5,7,8,13b,13c-octahydro-13H-benz(g)indolo(2,3-a)indolizine and 2(3)-chloro-1,4,4a,5,7,8,9,14,14b,14c-decahydroisoindolo(1,2-a)indolo(2,3-c)asepine. The biological properties of salts (hydrochlorides and methicldides) of these bases were studied. The results of these studies will be given in a future paper.

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USSR

POLYEVSKIY, G. A., VAKUROV, L. M.

UDC 621.396.4(088.8)

"Device for Synchronizing the Radio Relay Line with Double Modulation and Time Multiplexing"

USSR Author's Certificate No 250227, Filed 4 Apr 68, Published 16 Jan 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D319P)

Translation: This author's certificate introduces a device for synchronizing the radio relay line with double modulation and time multiplexing. In order to improve the noiseproofness of the operation in the case of interruptions of the input signal, two pulse multipliers with conversion of each phase mismatch pulse into a pulse train proportional to the length of the preceding signal break and varying in time with respect to an exponential law with restoration of the input signal after the break are included between the "lead" and "lag" outputs of the input signal phase analyzer and the corresponding inputs of the integrating reversing counter.

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032
TITLE--CAST IRON -U- UNCLASSIFIED PROCESSING DATE--27NOV70
AUTHOR--(03)-SHERMAN, A.D., VAKUSHIN, N.N., ABRAMENKO, YU.E.
COUNTRY OF INFO--USSR
SOURCE--U.S.S.R. 263,890
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CAST IRON, CHEMICAL PATENT, CHEMICAL COMPOSITION, CARBON,
SILICON, MANGANESE, COPPER, PHOSPHORUS, ALUMINUM, CHROMIUM, BORON, IRON
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1832
CIRC ACCESSION NO--AA0132097
STEP NO--UR/0482/70/000/000/0000/0000
UNCLASSIFIED

272 032
CIRC ACCESSION NO--AA0132097 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CAST IRON WITH IMPROVED MECH. PROCESSING DATE--27NOV70
PROPERTIES AND BETTER TECHNOL. PROPERTIES HAS THE FOLLOWING COMPN.: C
2.8-4.0, SI 2.0-3.5, MN 7.0-12, CU 1.5-30, P 0.5-0.8, AL 1-2.5, CR
1.5-3.0, S 0.1-0.5PERCENT, AND FE THE REMAINDER. FACILITY:
MOSKOVSKIY DVAZHDY ORDENA LENINA I ORDENA TRUDOVOGO KRASNOGO ZNAMENI
AVTOMOBIL'NYY ZAVOD IM. I. A. LIKHACHEVA.

UNCLASSIFIED

USSR

~~VALAKH, M. Ya.~~

UDC: 621.373:530.145.6

"Phonon Spectrum of Mixed Semiconductor Crystals Used in Lasers"

V sb. Kvantovaya elektronika. Vyp. 4 (Quantum Electronics--collection of works. No 4), Kiev, "Nauk. dumka", 1969, pp 250-269 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D226)

Translation: A survey is given of the present state of the problem of the phonon spectrum of mixed crystals. Various dynamic models of mixed crystals are analyzed based on the classical concept of atoms as point centers. The nature of rearrangement of the frequency spectrum as a function of the component make-up of the crystal is discussed in connection with the problem of the nature of the bonding forces in the lattice and the ratio of the masses of the substituent components. Experimental data are presented for mixed semiconductor crystals used as active media in lasers. Thirteen illustrations, bibliography of thirty-seven titles.

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Acc. Nr.

112048459

Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code

UR 0449

105548z Optical properties of arsenic sesquisulfide and antimony sesquisulfide single crystals. Valakh, M. Ya.; Nikolaeva, T. N. (Inst. Poluprov., Kiev, USSR). Fiz. Tekh. Poluprov. 1970, 4(1), 80-5 (Russ). The reflection and transmission spectra of As_2S_3 and Sb_2S_3 single crystals were investigated in the region of lattice-vibration frequencies. A complex multi-resonance nature of the curves related to polyatomicity of the crystal cell was obsd., with a large no. of phonon branches, as a consequence. Some values of the optical-phonon energies agree well with those detd. from edge absorption, for As_2S_3 . For As_2S_3 single crystals, a "thickness dependence" of the absorption coeff. was obsd., ascribed to interzone transitions.

Alexandre Fucs

REEL/FRAHE

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USSR

VALAKH, V. Ya., GIKHMAN, L. I.

UDC: 577.4

"Concerning an Approach to Describing the Operation of Automata
in Random Media"

Kiev, Teor. kibernetika--sbornik (Theoretical Cybernetics--
collection of works), 1971, pp 187-194 (from RZh-Kibernetika,
No 10, Oct 72, abstract No 10V414)

[No abstract]

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UDC: 577.4

USSR

VALAKH, V. Ya. and KOROLYUK, V. S.

"Stochastic Automata With Random Reaction Time and Their Operation in Random Media"

Moscow, V sb. Avtomaty, gibridn. i upravlyayushch. mashiny
(Automata, Hybrid and Control Machines--collection of works)
"Nauka," 1972, pp 38-45 (from RZh--Matematika, No 7, 1972,
Abstract No 7V371)

Translation: Given, a stochastic automaton with a finite number of states $\varphi_1, \varphi_2, \dots, \varphi_n$ and two inputs S_0 and S_1 . For both inputs S_α ($\alpha = 1, 2$) a matrix of transition probabilities $\|P_{ij}^{(\alpha)}\|$ is specified which determines, for each state φ_j of the automaton, the probability of its transition to state φ_i under the action of the input S_α . For any state of the automaton some action (output) f_k ($k \leq n$) is determined, i.e., $f_{k_i} = F(\varphi_i)$, where $k_i = 1, 2, \dots, k$.

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USSR

VALAKH, V. YA., and KOROLYUK, V. S., V sb. Avtomaty, gibridn, i upravlyayushch, mashiny, "Nauka," 1972, pp 38-45

The operation of such an automaton is considered for the case of continuous time in which, for each of the n states, the time the automaton remains in it is the random quantity ξ_i ($1 \leq i \leq n$). The magnitude of ξ is naturally considered as the time of the automaton's reaction to the input variable or to the preceding state of the automaton; the latter itself is then referred to as an automaton with random reaction time. In this paper, using semi-Markov processes, the authors investigate the problem of optimality in the behavior of the automaton with random reaction time. Using a specific example (an automaton with linear tactics) they find a solution for the problem of those conditions under which the values α_i (the average reaction time of the automaton) are satisfied if the behavior of the automaton in a random medium is to be asymptotically optimal. In this paper a solution is also found for the problem of the average time the automaton remains in a set of states with minimum penalty, and formulas are obtained for determining the average number of penalties at the input to an automaton with linear tactics for a limited interval of time. Author's abstract.

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USSR

UDC 577.4

VALAKH, V. YA., KOROLYUK, V. S.

"Stochastic Automata with a Random Reaction Time and Their Functioning in Random Media"

V sb. Avtomaty, gibridn. i upravlyayushch. mashiny (Automata, Hybrid and Control Machines -- collection of works), Moscow, Nauka Press, 1972, pp 38-45 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V371)

Translation: There is a stochastic automaton with a finite number of states $\phi_1, \phi_2, \dots, \phi_n$ and two inputs S_0 and S_1 . For both inputs S_α ($\alpha = 1, 2$), the transition probability matrix $\|p_{ij}^{(\alpha)}\|$ is given which for each of the states of the automaton ϕ_j defines the probability of its transition to the state ϕ_j under the effect of the input S_α . For any state of the automaton, an effect (output) is defined f_k ($k \leq n$), that is, $f_{k_i} = F(\phi_i)$ where $k_i = 1, 2, \dots, k$.

A study was made of the operation of this automaton in the case of continuous time when for each of the n states the time the automaton is in it is a random variable ξ_i ($1 \leq i \leq n$). The value of ξ is, of course, considered as the reaction time of the automaton to the incoming value of the input variable

USSR

VALAKH, V. YA., et al., Avtomaty, gibridn. i upravlyayushch. mashiny, Moscow, Nauka Press, 1972, pp 38-45

or the preceding state of the automaton, and in this case the automaton itself is called an automaton with a random reaction time. In this paper, the apparatus of semimarkov processes is used to study the problem of expediency in the behavior of the automaton with a random reaction time. In the specific example (an automaton with linear tactics), the problem is solved as to what conditions the values of α_i (the mean reaction times of the automaton) must satisfy in order that the behavior of the investigated automaton in a random medium be asymptotically optimal. In the paper, the problem of the mean time the automaton is in a set of states with minimum penalty is solved, and formulas are obtained for determining the mean number of penalties at the input of the automaton with linear tactics in a limited time interval.

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- 19 -

USSR

UDC: 621.397.62:535.67

✓
VALANCHYUS, A. I.

"Determination of the Angles of Electron Beams After Dynamic Convergence"

V sb. Radioelektronika. T. 5 (Radioelectronics. Vol 5--collection of works),
Kaunas, 1969, pp 235-240 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 70208)

Translation: Formulas are derived for determining the angles of electron beams at the origin of the magnetic field of a deflecting system when they are horizontally and vertically deflected across the center of the screen after dynamic convergence. The resultant relationships can be used to determine the values of the altered projections of electron velocity as the electrons enter the deflecting magnetic field after dynamic convergence. As a result it is possible to calculate the amount of deflection of electron beams at corner points of the screen. M. T.

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USSR

UDC: 621.397.62

STETSEVICH, R. M., VALANCHYUS, A. I., CHEPULIS, V. V.

"Graphoanalytic Calculation of the Amount of Deflection of Electron Beams as a Function of Magnetic Field Distribution"

V sb. Radioelektronika. T 5. (Radio Electronics. Vol 5--collection of works), Kaunas, 1969, pp 225-230 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G195)

Translation: It is shown that a graphoanalytic method is most convenient to use in calculating the amount of deflection of electron beams on a kinescope screen. Emphasis is placed on the fact that this simplifies the problem of determining the coordinates of luminescent spots on the screen for any laws of distribution of the magnetic field in the deflecting system and arbitrary values of the initial angles and coordinates of the electron beams at the origin of the deflecting field. It is pointed out that in cases where the initial angles and coordinates of the electron beams are given exactly, and the components of the magnetic field are defined with an error of no more than 1%, the total error in determining the coordinates of the luminescent spots on the screen does not exceed 1%. It is noted that comparison of the computational and experimental results verifies the feasibility of using conventional electron trajectories in calculating and analyzing the amount of deflections. M. T.

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USSR

532.1 + 62-242

✓
VALASHOV, D. B.

"Self-Sealing Piston with Preliminary Compression for Devices Separating Pressure-Transmitting Fluids"

Tr. Metrol. In-Tov SSSR, Vyp. 104(164), [Works of Metrological Institutes of USSR, No. 104(164)], pp 161-163 (translated from Referativnyy Zhurnal Metrologiya I Izmeritel'naya Tekhnika, No. 4, 1970, Abstract No. 4.32.762, unsigned)

Translation: The design of the seal of a piston for devices separating pressure-transmitting fluids is described. The piston includes two mushroom seals based on the non-compensated area principle, in which the heads of the preliminary compression bolts are connected by a blind joint. Therefore, the preliminary compression bolts are located inside the piston, allowing the principles of self-sealing and preliminary compression to be combined when liquids under pressure are located on both sides of the piston. The structure is designed to operate at pressures up to $10,000 \text{ kg/cm}^2$ with a piston diameter of at least 1.5 cm. The piston was tested for long-term separation of gasoline and transformer oil. The tests showed that liquid mixing was practically zero. One illustration, six biblio. refs.

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USSR

UDC 620.193.5

SOROKIN, YU. I., TSEYTLIN, KH. L., VALASHOVA, A. A., BABITSKAYA, S. M.,
LEVIN, YA. S., Scientific-Research Institute of Organic Semi-Products and Dyes
"Influence of Water Vapor and Its Mixtures With Carbon Dioxide on Corrosion
of Metals in Ammonia at 500°"

Moscow, Zashchita Metallov, No 4, 1972, pp 430-434

Abstract: It was shown earlier that the catalytic action of metals on dissociation of ammonia and their corrosion resistance are interrelated. It was therefore of interest to determine the influence of water vapor and its mixtures with CO₂ on the resistance of metals to a stream of gaseous ammonia. The addition of water vapor has little influence on corrosion losses of carbon steel, but its mechanical properties change significantly, specimens breaking at bending angles of 30° after 400 hours (as opposed to 90° in pure ammonia). Water vapor sharply reduces the corrosion of stainless steel. The strength properties of the steel change little. The addition of carbon dioxide with water vapor sharply increases total corrosion of carbon steel. The strength properties change slightly, but cracks appear at bending angles of 90°.

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Heat, Combustion, Detonation

USSR

UDC: 536.24:532.54

AMBRAZYAVICHYUS, A. B., ZHUKAUSKAS, A. A., VALATKYAVICHYUS, P. Yu.

"Investigation of the Influence of the Temperature Factor on Heat Exchange During Turbulent Flow of a Gas in a Tube"

V sb. Teplo- i massoperenos (Heat- and Mass-Transfer--collection of works), T. 1, Minsk, 1972, pp 121-127 (from RZh-Mekhanika, No 7, Jul 72, Abstract No 7B783)

Translation: An investigation is made experimentally into turbulent heat exchange in a tube 21.3 mm in diameter over a broad range of temperatures and flow velocities: $18 \leq l/d \leq 44$, $500 < T_j < 4700$ K, $1.5 \leq T_j/T_w \leq 12$, $5 \cdot 10^3 \leq R_j \leq 10^5$. The experiments were done in flows of air or nitrogen on a specially developed experimental installation with 300 kW electric arc heating.

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USSR

UDC [537.226+537.311.33]:[537+535]

VALATSKA, K. K., DAVIDENENE, D. K., KNISHEVSKIY, K. M., and LEONAS, P. I.

"Investigation of Photoeffect in Germanium and Silicon Under Photoreflex Conditions"

Lit. fiz. sb. (Collection of Lithuanian Works on Physics), 1971, 11, No 2, pp 269-275 (summaries in Lithuanian and English) (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE790 by authors)

Translation: The authors investigated the intrinsic photoeffect in Ge and Si under photoreflex conditions. Theoretical calculations are given of spectral characteristics of the photoreflex signal for specimens of varying thickness with varying surface treatment, as well as a comparison of these calculations with experimental results.

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USSR

UDC [537.226+537.311.33]:[537+535]

BAKUTIS, I. P., BAREYKENE, R. M., and VALATSKA, K. K.

"Temperature Dependence of Photovoltaic Effect in CdTe Thin Layers"

V sb. Tonkiye plenki sovedineniy tellura s metallami podgrupp tsinka i galliya (Thin Films of Tellurium Compounds with Metals of Zinc and Gallium Subgroups -- Collection of Works), Vil'nyus, 1970, pp 63-68 (from RZh-Fizika, No 10, Oct 71, Abstract No 10YE814 by E. B. K.)

Translation: The authors investigated the temperature dependence of the photovoltage (PV) in photovoltaic CdTe layers in which PV polarity depends on direction of illumination. Specimens were made by simultaneous evaporation of CdTe and Cd; then after the lapse of a certain time cadmium evaporation was halted and only the evaporation of stoichiometric CdTe continued. On illumination of the resultant specimens in the direction of the layer, the magnitude of PV increases at first with a decline in temperature, but starting at a certain temperature, different for each specific wavelength of exciting light it begins to decline and changes its sign. The authors believe that the results can be explained by means of a model which assumes anisotropy of the electrical conductivity of photoactive crystallites and that a high PV is the sum of elementary transverse Dember photoelectromotive forces. No final

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USSR

BAKUTIS, I. P., et al., Tonkiye plenki soyedineniy tellura s metallami
podgrupp tsinka i galliya, 1970, pp 63-68

conclusions can be drawn on the basis of the cited data as to the nature of
the observed PV sign inversion with a change in temperature.

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USSR

UDC 621.376.2

BRAZIS, R. S., VALATSKA, K. K., MACHYULAYTIS, Ch. V., POZHELA, Yu. K.,
Institute of Physics of Semiconductors, Academy of Sciences of the Lithu-
anian SSR

"An Amplitude Modulator"

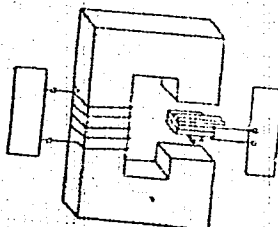
Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 4, Feb 72, Author's Certificate No 326700, Division H, filed 7 Apr '70,
published 19 Jan 72, pp 207-208

Translation: This Author's Certificate introduces an amplitude modulator
which contains a supply source connected to the winding of an electro-
magnet, and a semiconductor plate which is placed in the fixed magnetic
field of the electromagnet perpendicular to its broad planes. The device
also contains carrier-frequency input and output circuits placed across
the wide faces of the plate, and a source of modulating voltage. As a
distinguishing feature of the patent, speed is increased by making the
semiconductor plate with deep-lying plane junctions (e. g. of the PN type),
and by connecting the ohmic contacts on both sides of the junction directly
to the source of modulating voltage.

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USSR

BRAZIS, R. S. et al., USSR Author's Certificate No 326700



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USSR

UDC 621.375.4.523.8

VALAYEV, N. I., KRIGER, YE. G. and OGINSKIY, A. A.

"Transistorized Amplifier for a Tracking System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 51. Author Certificate No 258389.

Abstract: An author certificate has been granted for a transistorized amplifier for a tracking system. The amplifier is made in the form of a preliminary amplifier summator and a two half-period amplifier-demodulator with a negative output current feedback. To simplify and to increase reliability, it contains a current transformer in the feedback circuit, two windings of the transformer are connected in series with the demodulator transistors, while the third winding (step-up) is connected to the preliminary amplifier input.

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Acc. Nr.: MC040450 ✓

Ref. Code: UR 0482

USSR

UDC 621.375.4.523.8 JPRS 58248

VALAYEV, N. I., KRIGER, YE. G. and OGINSKIY, A. A.

"Transistorized Amplifier for a Tracking System"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 1, 1970, p 51. Author Certificate No 258389.

Abstract: An author certificate has been granted for a transistorized amplifier for a tracking system. The amplifier is made in the form of a preliminary amplifier summator and a two half-period amplifier-demodulator with a negative output current feedback. To simplify and to increase reliability, it contains a current transformer in the feedback circuit, two windings of the transformer are connected in series with the demodulator transistors, while the third winding (step-up) is connected to the preliminary amplifier input.

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1/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--COMPLEX EQUIPMENT FOR LABORATORY TESTS OF PNEUMATIC AND SOLID TYRES

AUTHOR--(G4)--PETKOV, B., VALCEV, K., GALABOV, J., YURUKOV, V.

COUNTRY OF INFO--BULGARIA, USSR

SOURCE--MASHINOSTROENE, 1970, VOL 19, NR 4, 156-158

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, METHODS AND EQUIPMENT

TOPIC TAGS--MOTOR VEHICLE TIRE, TEST METHOD, STATIC TEST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1999/1743

STEP NO--BU/9002/70/019/004/0156/0158

CIRC ACCESSION NO--AP0123544

UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0123544

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPLEX EQUIPMENT DESCRIBED WHICH IS USED IN THE TESTING OF COMPACT AND PNEUMATIC TYRES PROVIDES FOR CARRYING OUT COMPLETE INVESTIGATION OF AUTOMOBILE AND ELECTRIC TRUCK TYRES BOTH UNDER LABORATORY AND FIELD CONDITIONS. THE RESULTS ARE GIVEN OF STATIC AND DYNAMIC TESTS OF TYRES OF BULGARIAN AND SOVIET MANUFACTURE.

UNCLASSIFIED

USSR

UDC 621.313.12:538.4

APUKHTINA, YE. G., BORDACHEVA, V. V., VAL'DBERG, A. YU., VIKHROV, YE. A., KURKIN, V. P., MOSTINSKIY, I. L., NEKHOROSHEV, R. S., SOROKIN, G. S., FEDOROVA, ZH. S.

"Study of Various Methods of Trapping an Ionizing Additive in the U-02 Experimental Magnetohydrodynamic Generator"

V sb. Magnitogidrodinam. metod polucheniya elektroenergii (Magnetohydrodynamic Method of Obtaining Electric Power--collection of works), vyp. 3, Moscow, Energiya, 1972, pp 202-219 (from RZh-Aviatsionnyye i raketnyy dvigateli, otdel'-nyy vypusk, No 11, Nov 72, Abstract No 11.34.137)

Translation: The requirements on additive injection systems are formulated. Methods of trapping an ionizing additive and the structural execution are described. The operating experience using additive injection systems in experimental magnetohydrodynamic generators is described, and results are presented from studies of the efficiency of trapping them with submicron K_2CO_3 dust from a flow of combustion products are presented. A study was made of the advantages and disadvantages of each of the systems. There are 7 illustrations and a 13-entry bibliography.

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USSR

UDC: 536.53

FASTRITSKIY, V. S., VAL'DMAN, A. B., Riga Polytechnical Institute

"A Device for Noncontact Measurement of the Temperature of a Moving Ferromagnetic Tape"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 73, Author's Certificate No 369432, division G, filed 12 May 71, published 8 Feb 73, p 118

Translation: This Author's Certificate introduces a device for noncontact measurement of the temperature of a moving ferromagnetic tape. The device contains a high-frequency oscillator which feeds a reference circuit and measurement circuit through cathode followers. The measurement circuit contains an eddy current pickup, and the tape to be checked is located in the field of this pickup. The device also contains a phase-sensing comparison unit and an output instrument. As a distinguishing feature of the patent, accuracy is improved by adding a controllable phase-shifter and a clipper amplifier, and connecting them between the pickup and the comparison unit.

1/1

1/2 020
TITLE--FRAGMENTAL MORPHOFUNCTIONAL ORGANIZATION OF THE BULBAR VASOMOTOR
CENTER -U-
AUTHOR--(02)-VALDMAN, A.V., KOVALEV, G.V.
COUNTRY OF INFO--USSR
SOURCE--BYULLETEN' EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,
NR 4, PP 15-21
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--CAT, HISTOLOGY, SMALL INTESTINE, BLOOD VESSEL, NERVOUS SYSTEM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1988/1577
CIRC ACCESSION NO--AP0106323
STEP NO--UR/0219/70/069/004/0015/0021
UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--AP0106323
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--02OCT70

ABSTRACT. EXPERIMENTS WERE PERFORMED ON 80 CURARIZED CATS. UNIPOLAR STIMULATION (MICROELECTRODE, 30-50 MUM) OF STRUCTURES OF THE BULBAR VASOMOTOR CENTER WITH SUBSEQUENT HISTOLOGICAL CONTROL WERE PERFORMED. THE VASCULAR TONE OF THE HIND LIMB AND SMALL INTESTINE WAS DETERMINED BY MEANS OF RESISTOGRAPHY. IN STIMULATION OF MEDIAL RETICULAR NUCLEI THE AUTHORS DEMONSTRATED AN ISOLATED RISE OF THE VASCULAR TONE OF ONE CIRCULATORY REGION WITHOUT ALTERATION OF THE TONE IN THE OTHER. UPON ACTIVATION OF THE REGION OF THE SOLITARY TRACT AND DESCENDING PATHWAYS THERE OCCURRED DIVERSE DIRECTED SHIFTS OF THE VASCULAR TONE (DEPRESSOR REACTIONS OF VESSELS OF THE HIND LIMB IN COMBINATION WITH PRESSOR REACTIONS OF VESSELS OF THE SMALL INTESTINE OR VICE VERSA). THE AUTHORS PRESENT A TOPOGRAPHIC DISTRIBUTION OF AREAS WITHIN THE LIMITS OF STRUCTURES OF THE RHOMBOENCEPHALON, DURING THE STIMULATION OF WHICH THERE OCCURRED PREVALENT RESPONSES OF VESSELS OF THE HIND LIMB OR SMALL INTESTINE. THE LOCALITY OF VASOMOTOR REGULATION IS ASSOCIATED WITH THE FEATURES PECULIAR TO THE MORPHOLOGICAL ORGANIZATION OF THE BULBAR VASOMOTOR CENTER AND IS RETAINED IN DEFINITE PARAMETERS OF PHYSIOLOGICAL ACTIVATION.

UNCLASSIFIED

USSR

UDC 615.217.34.017:615.214.22+615.214.32

VAL'DMAN, A. V., and KOZLOVSKAYA, N. M., Chair of Pharmacology,
First Leningrad Medical Institute imeni I. P. Pavlov

"Experimental Studies on the Tranquilizing and Antidepressant
Effects of Central Cholinolytics"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 1, 1970,
pp 51-56

Abstract: Emotional states and depression were simulated in rabbits
by stimulating the hypothalamus and medial portions of the septal
zone. In low doses (0.005-0.1 mg/kg) scopolamine, amiazil and meth-
yldiazil exerted a tranquilizing effect by suppressing the emo-
tional state in aggressive-defensive behavior. The drugs impaired
intraseptal relations by blocking the effects of stimulation of
the lateral portions of the septum. At the same time, the cholino-
lytics helped to inhibit the medial portions of the septum. In
large doses (0.5-0.8 mg/kg), they suppressed the inhibitory in-
fluences of the septum, chiefly in the caudal direction, a fact
that may have a bearing on the antidepressant properties of central
cholinolytics.

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USSR

Publications

UDC 615.783

VAL'DMAN, A. V.

Neyrofarmakologiya Narkoticheskikh Anal'getikov (The Neuropharmacology of Narcotic Analgesics), Leningrad, Izdatel'stvo Meditsina, 1972, 223 pp

Translation: Table of Contents:

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USSR

VAL'DMAN, A. V., Izdatel'stvo Meditsina, 1972, 223 pp

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USSR

VAL'DMAN, A. V., Izdatel'stvo Meditsina, 1972, 223 pp

Effect of Analgesics on the Respiratory Reaction Evoked by
Stimulation of the Vagus Nerve
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USSR

UDC 615.214.32.015.001.57

VAL'DMAN, A. V., and KOZLOVSKAYA, M. M., Department of Pharmacology, 1st Leningrad Medical Institute imeni I. P. Pavlov, Leningrad, USSR

"The Effects of Antidepressants on Neurophysiological Models"

Moscow, Farmakologiya i Toksikologiya, Vol 36, No 2, 1973, pp 139-143

Abstract: The specific activities of 3 tricyclic antidepressants, imipramine (I), pertofrane (II), and doxepin (III) were tested on rabbits and compared with stimulants and tranquilizers. Electrodes were implanted into the medial and lateral zones of the septal region, and the posterior hypothalamus of 52 animals. Stimulation of the medial region of the septal zone elicited depression, lethargy, and inhibition of muscular and sympathetic tonus; in this situation hypothalamic stimulation failed to evoke emotional aggressive-defensive reactions. Stimulation of the lateral septal regions caused a stuporous condition, and stimulation of the periventricular hypothalamic nuclei elicited an aggressive motor reaction. All drugs were administered intravenously. Low doses of I (0.3-3 mg/kg), II (0.3-1 mg/kg), and III (0.05-0.1 mg/kg) abolished the reactions elicited by the stimulation of the medial septal zone. I and II enhanced the effects obtained by stimulation of the lateral septal zones and of the hypothalamus. The administration of III inhibited the effects of lateral septal zone stimulation, and the hyperemotional results of hypothalamic

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USSR

VAL'DMAN, A. V. and KOZLOVSKAYA, M. M., Farmakologiya i Toksikologiya, Vol 36, No 2, 1973, pp 139-143

stimulation. Higher doses of I (5-6 mg/kg) and II (2 mg/kg) inhibited hyper-emotional and aggressive reactions but, unlike psychodepressants, did not alter proper response to various test stimuli and motivated behavior patterns. Simultaneous septal and hypothalamic stimulations showed that caffeine abolishes inhibitory signals from the septum to the diencephalic structures at a dose of 0.5-20 mg/kg, but did not alter septal or hypothalamic excitability. Phenamine (0.5-2 mg/kg) depressed the threshold for the hypothalamic reaction, but did not abolish septal inhibition. Low doses of central cholinolytics (scopolamine, amizil; 0.05-0.1 mg/kg) enhanced the inhibitory effects of the medial septal zones, but abolished those of the lateral septal zones and depressed reactions elicited by hypothalamic stimulation. The effects of elenium were similar to those of III. The neuroleptics aminazine (2 mg/kg) and haloperidol (0.03-0.5 mg/kg) enhanced the effects obtained through the stimulation of the medial septal zones, depressed the reactions of the lateral septal zones, and decreased the excitability of the hypothalamus. Thus, of the classes of psychotropic agents investigated, the antidepressants I, II, and III at low doses depress the inhibitory influences of the limbic system which are mediated by the septal zone, and concomitantly facilitate hypothalamic integration of incoming emotional information.

2/2

Physiology

USSR

UDC 612

VAL'DMAN, A. V., and KOZLOVSKAYA, M. M., Chair of Pharmacology, First Medical
Institute imeni I. P. Pavlov, Leningrad

"Experimental Investigation of Emotional States in Animals"

Moscow, Uspekhi Fiziologicheskikh Nauk, Vol 4, No 1, Jan/Feb/Mar 73, pp 31-52

Abstract: The old tenet that emotion is a psychological category which has no neurophysiological aspect and that it therefore cannot be studied scientifically in animals is no longer regarded as valid. Two emotional components can be distinguished: 1) the subjective experience which reflects the individual's relationship to the surrounding world and to himself and which is called emotional experience or state, and 2) the accompanying somatic and visceral shifts, which are called emotional manifestation or expression. Both develop in parallel on the basis of biologically consolidated neurophysiological mechanisms. In animals (except for those especially trained in tricks), emotional manifestations correctly reflect the quality and intensity of the primeval emotions, such as fear, rage, and pain. Electrical stimulation of individual brain structures may cause a specific emotional experience, but only the emotional manifestations can be observed by the investigator. However, under the artificial experimental

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USSR

VAL'DMAN, A. V., and KOZLOVSKAYA, M. M., Uspekhi Fiziologicheskikh Nauk, Vol 4, No 1, Jan/Feb/Mar 73, pp 31-52

conditions, the manifestations may no longer signify the simultaneous existence of the emotional experience, that is, the manifestations can be evoked alone. One cardinal characteristic of emotion is inertia of the psychic state with protracted alteration in the organism's reactivity. This prolonged change at times is and at other times is not observed after electrical stimulation. Since an emotion cannot be generated "at the tip of an electrode," it is suggested that the electrode may stimulate a trigger zone, coordinating neurons, or integrating paths which then activate a larger number of brain structures. The functional organization of emotional behavior is analyzed, and models of emotional states are presented.

2/2

- 37 -

1/2 019 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--AMYLCLYTIC FUNCTION OF THE PANCREAS IN PATIENTS WITH CHRONIC
HEPATITIS AND CIRRHOSIS OF THE LIVER -U-
AUTHOR--VALENKEVICH, L.N.
COUNTRY OF INFO--USSR
SOURCE--SOV MED 33(3): 101-104. 1970.
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--HEPATITIS, CIRRHOSIS, AMYLASE, BLOOD CHEMISTRY, URINE,
DIAGNOSTIC MEDICINE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY FICHE NO----FD70/605014/C01 STEP NO--UR/0399/70/033/004/0101/0104
CIRC ACCESSION NO--AP0140465
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0140465

ABSTRACT/EXTRACT--(U) CP-0- ABSTRACT. DIASTASE AND PROSERINE CURVES WERE ANALYZED IN 18 PATIENTS WITH CHRONIC HEPATITIS AND IN 30 OTHERS WITH LIVER CIRRHOSIS. PROSERINE TEST TURNED OUT PATHOLOGICAL IN 75PERCENT AND DIASTASE CURVES IN 69PERCENT OF THE CASES. WHEN COMPARING THESE TESTS WITH THE BLOOD AND URINE DIASTASE, AND MUCH GREATER DIAGNOSTIC VALUE AND ACCESSIBILITY OF THE PROSERINE TEST BECOMES APPARENT. FACILITY: LENINGRAD SANIT.-HYG. MED. INST., LENINGRAD, USSR.

UNCLASSIFIED

1/2 019
UNCLASSIFIED
PROCESSING DATE--16OCT70
TITLE--THE EFFECT OF PARENTERAL HIGH PROTEIN NUTRITION ON THE EXTERNAL
SECRETORY FUNCTION OF THE PANCREAS IN PATIENTS WITH CHRONIC PANCREATITIS
AUTHOR--(02)-YAKHONTOVA, O.I., VALENKEVICH, L.N.
COUNTRY OF INFO--USSR
SOURCE--VOPROSY PITANIYA, 1970, NR 3, PP 67-70
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PANCREATITIS, PARENTERAL NUTRITION, DUODENUM, ENZYME ACTIVITY,
BICARBONATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1998/0002
STEP NO--UR/0244/70/000/003/0067/0070
CIRC ACCESSION NO--AP0120702
UNCLASSIFIED

2/2 019

CIRC ACCESSION NO--AP0120702
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT. INTRAVENOUS DROP BY DROP INFUSION OF AMINOPEPTIDE 2 WAS PRACTISED IN TREATING 68 PATIENTS SUFFERING FROM CHRONIC PANCREATITIS. IN DOING THIS, APART FROM THE CLINICAL EFFECT, RECORD WAS ALSO TAKEN OF THE TRYPSIN, AMYLASE, LIPASE, ENTEROKINASE, ALKALINE PHOSPHATASE ACTIVITY; BICARBONATE ALKALINITY, TOTAL AND RESIDUAL NITROGEN AND THE AMOUNT OF JUICE IN THE DUODENAL CONTENTS. THE TRYPSIN, TRYPSIN INHIBITOR, LIPASE AND AMYLASE ACTIVITY IN THE BLOOD WAS ALSO MEASURED. INVESTIGATIONS WERE EFFECTED 1.5-2 HOURS AFTER A SINGLE INTRODUCTION OF AMINOPEPTIDE AND AT THE END OF THE MEDICATION COURSE. AMINOPEPTIDE 2 WAS FOUND TO PRODUCE A BENEFICIAL EFFECT ON THE CLINICAL COURSE OF CHRONIC PANCREATITIS. THE DUODENAL CONTENTS AND BLOOD DEMONSTRATED NORMALIZATION OF THE PROTEOLYTIC ENZYMES AND ENTEROKINASE ACTIVITY AND A TENDENCE TOWARDS INCREASED ACTIVITY OF THE TRYPSIN INHIBITOR. FACILITY: KAFEDRA VNUTRENNIKH BOLEZNEY NO 2 LENINGRAD. SANITARNOGIGIYENICHESKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

Acc. Nr: **APG 044845**

PRIMARY SOURCE: **Klinicheskaya Meditsina**, 1970, Vol 48,
Nr 2, pp 126-129

Ref. Code:

UR 0497

SOME FEATURES PECULIAR TO THE ORIGIN AND COURSE
OF CHRONIC PANCREATITIS

V. G. Smagin, O. I. Yakhontova, L. N. Valenkevich

Summary

In order to elucidate the causes of chronic pancreatitis the authors examined 146 patients. The most frequent cause was the presence of previous chronic diseases of the biliary tract (60.2%). In 13.7 per cent of cases peptic ulcer preceded, in 13.7 per cent — acute pancreatitis, in 4.1 per cent — epidemic hepatitis, in 5.4 per cent — cholecystectomy and in 2.7 per cent — different operations in the abdominal cavity. In the study of the clinical picture special attention should be paid to the so-called latent form of chronic pancreatitis which is not always correctly diagnosed. This form of the disease was noted in 17.7 per cent of cases.

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USSR

UDC: 532.517.4

MOVCHAN, V. T., VALECHIK, I. A.

"Determination of Velocity Profiles in Axisymmetric Jets Striking a Screen on the Basis of Measurements of Characteristics of Turbulence"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collected Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1970, vyp. 6, pp 70-73 (from *RZh-Mekhanika*, No 7, Jul 71, Abstract No 7B852)

Translation: It is assumed that turbulent tangential stress is expressed by the formula $\tau = \rho l^2 \partial u / \partial y$ (ρ is the density of the liquid, l is the time-averaged kinetic energy of turbulence, l is the length of the mixing path), $l = k_1 y$ and $e/e_0 = A y^{1/n}$ close to the wall, and $l = k_2 l$ and $e = e_0(x)$ in the jet part of thickness b . The authors then present the profiles of the tangential stresses in the wall and jet parts in the form of polynomials, and derive expressions for the velocity profiles in the jet near the wall. From measurements of the characteristics of turbulence in a radial jet near the wall, they find $A = 1.05$, $n = 10$. A. S. Ginevskiy.

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USSR

UDC 547.241

VALETIDINOV, R. K., ZARIPOV, SH. I., and KHASANOV, M. KH., Kazan' Branch of the
All Union Scientific Research Institute of Synthetic Rubber Imeni S. V. Lebedev

"Reaction of Alkyldi(hydroxymethyl)phosphines and Their Oxides With Isocyanates"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 5, May 73, pp 1029-1034

Abstract: Reactions of alkyldi(hydroxymethyl)phosphines and their oxides with phenyl and m-chlorophenyl isocyanates yield respective alkyldi(aryluethanomethyl)-phosphines and their oxides. It was noted that the catalytic effect of alkyldi(hydroxymethyl)phosphines on the polymerization of phenyl isocyanate and dimerization of m-chlorophenyl isocyanate is in direct relationship to the nucleophilicity of the phosphorus atom. It has been shown that alkyldi(hydroxymethyl)phosphines are more reactive than their oxides in the reaction with isocyanates.

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Organophosphorous Compounds

USSR

UDC: 618.664.066

OPRYA, V. Ya., SMETANKINA, N. P., VALETDINOV, R. K., Institute
of Chemistry of High-Molecular Compounds, Kiev

"Polyurethane Coatings Which Contain Phosphorus"

Kiev, Khimicheskaya Tekhnologiya, No 1(61), Jan/Feb 72, pp 34-36

Abstract: In order to determine the possibility of reducing the flammability of polyurethane lacquer compositions, the authors investigate the effect of adding various quantities of tri(hydroxymethyl)phosphine to compositions based on a copolymer of tetrahydrofuran with propylene oxide combined with polyisocyanate. The optimum combination of physical and mechanical properties is observed in coatings using equimolar amounts of tri(hydroxymethyl)phosphine and polyester. Films with a phosphorus content of 0.035-0.25% are self-quenching.

USSR.

UDC 547.241.

KOMISSAROVA, S. L., VALETDINOV, R. K., and KUZNETSOV, Ye. V., Kazan',
Chemical-Technological Institute imeni S. M. Kirov

"Reaction of Alkyl-di(hydroxymethyl) phosphines With Acrylonitrile"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (103), No 2, Feb. 71, pp 322-324

Abstract: The reaction of alkyl-di(hydroxymethyl) phosphines with acrylonitrile leads to the formation of alkylbis(β -cyanoethyl)phosphines provided that the reaction temperature is kept below +20°C. A sample of 10.6 g of acrylonitrile inhibited with hydroquinone was added dropwise to 10.8 g methyl-di(hydroxymethyl)phosphine under nitrogen, with stirring, keeping the reaction-mixture temperature below +20°C. After the completion of addition the reaction mixture was subjected to a vacuum and the product was distilled under vacuum. The reaction was not possible with methacrylonitrile even with heating.

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Organophosphorous Compounds

USSR

UDC 678.664-985.002.612

VALETDIHOV, R. K., ZUYKOVA, A. N., KHASANOV, M. KH., and SHARIFULLIN, A. SH.,
Kazan Branch of the All Union Scientific Research Institute of Synthetic
Rubber Imeni S. V. Lebedev

"Properties of the Phosphorus Containing Urethane Elastomers Based on Simple
Polyesters"

Moscow, Kauchuk i Rezina, No 11, 1972, pp 15-17

Abstract: A method has been proposed for the modification of industrial rubber
SKU-PF based on polyfurite by a partial or complete replacement of the trimethyl-
olpropane and monoallyl ether of the glycerine with tri-(hydroxymethyl)-phosphine
or its oxide. Thus modified rubbers show higher thermal stability and lesser
flammability in comparison to the SKU-PF rubber. When the tri-(hydroxymethyl)-
phosphine is used, the physical-mechanical properties of the vulcanized rubber
remain practically unchanged.

USSR

UDC 621.372.413(088.8)

RYZHAKOV, S. M., VALETENKO, H. H.

"Coaxial Resonator for a Self-Oscillator"

USSR Author's Certificate No 254603, Filed 29 Jul 68, Published 13 Mar 70 (from
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10B166 P)

Translation: The proposed coaxial resonator for a self-oscillator consists of a segment of coaxial line shorted at one end and open at the other with stepped outer conductor, two PN diodes mounted close to its short-circuited end, and a non-contact piston. The PN diodes are controlled by external voltage. To keep the electronic mismatch constant over a wide range of working frequencies of the resonator, the diodes are connected in parallel in the segment of coaxial line in the section where the diameter of the outer conductor increases. The series circuit comprised of a coupling capacitor, the capacitance of the PN junction and the lead inductance of the first diode is tuned to resonance on a frequency higher than the maximum working frequency of the resonator, while this series combination for the second diode is tuned to a frequency lower than the minimum working frequency of the resonator. One illustration.

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USSR

USSR 682.393.6-181.3

BLINOV, I. G., VALEYEV, A. S., MELEKHIN, Yu. Ya., KIRKNEVICH, V. A., FAIKRATOV, L. M.,
SLADKOV, V. I.

"Cathode Vaporization of Thin Films of Tantalum"

Elektron. prom-st', Nauchno-tekhn. sb. (The Electronics Industry, Scientific and
Technical Collection), 1970, No 1, pp 69-70 (from RZh-Radiotekhnika, No 10, Oct 70,
Abstract No 16V232)

Translation: A brief description is given of the Soviet UV-52P-1 device for pro-
ducing tantalum films. The unit can be used to make films with surface resistance
spread of less than 4% in a single batch, and less than 7% from batch to batch.
Two illustrations. M. S.

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USSR

VALEYEV, A. SH., GRECHUKHINA, T. I., PETROV, G. I.

UDC 621.357.8:669.35'5

"Efficient Method of Electrochemical Grinding of Copper and Brass"

V sb. Novove v elektrofiz. i elektrokhim. obrabotke materialov (What's New in Electrophysical and Electrochemical Treatment of Materials -- collection of works), Leningrad, Mashinostroyeniye Press, 1972, pp 60-62 (from RZh-Khimiya, No 12, Jun 72, Abstract No 12L309)

Translation: A method was developed for electrochemical grinding which permits smoothing of the microrelief of the surface formed as a result of machining by a cutting tool, coarse emery or sand with comparatively small removal of metal. The relief 20 μ high on copper is smoothed by removing ~60 μ of metal. The same relief on brass is smoothed by removing 100 μ of metal. With the corresponding removal of metal it is possible to smooth relief up to 40 μ high and more. The method is based on anode solution in agitated diluted solutions of H_2SO_4 (100-150 g/liter) with $CuSO_3$ additives (100-150 g/liter) under the conditions of the formation of a film with high resistance on the metal surface. The electrolyte temperature is room temperature, D_a is 40-50 amps/dm², the voltage on the electrolyzer terminals is 15-18 volts, and the machine time, 10 minutes.

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USSR

UDC: 531.36

VALEYEV, K. G., Kiev

"Dynamic Stabilization of Unstable Systems"

Moscow, Izvestiya AN SSSR: Mekhanika Tverdogo Tela, No 4, Jul/Aug 71,
pp 13-21

Abstract: Convenient computational formulas are derived for converting an unstable system to a stable system by applying variable forces with a zero average value. The formalism is based on analysis of a certain class of functions whose definition includes periodic functions, finite trigonometric polynomials, quasiperiodic functions and even certain random processes. The paper contains sections dealing with the stability of slow oscillations, oscillations of the point of suspension of a pendulum, stability of a system of second-order equations, the use of resonance for stabilization, and dynamic stabilization of fast oscillations.

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USSR

UDC 533.652/.661.013

VALEYEV, K. G., MEL'NIKOV, B. N., TOKAREV, V. I., and SHMAKOV, I. P.

"Method of Determining the Optimal Takeoff Envelope of an Aircraft With Minimum Localized Noise"

Samolestostr. i tekhn. vozd. flota. Resp. mezhved. nauchno-tekhn. sb.
(Aircraft Construction and the Technical Air Fleet, Republic Interdepart-
mental Scientific-Technical Collection), Vypusk (Issue) 21, 1970, pp 27-31
(from RZh-Mekhanika, No 12, Dec 70, Abstract No 12B353, by G. S. Aronin)

Translation: A solution to a system of equations of aircraft motion in the vertical plane at takeoff forming a noise criterion at a minimum is derived. The surface density of acoustic energy swept along during the takeoff period at a given point at a location lying in the plane of the takeoff trajectory is adapted as the noise criterion. The problem is solved by a method based on a study of the first variation of a functional characterizing the noise criterion adopted. The angle of attack and the thrust are chosen as the control functions. Results of calculations of the takeoff trajectory, optimal in the sense described above, of an aircraft with characteristics similar to the Tu-124 are presented. The angle of attack

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USSR

VALEYEV, K. G., et al., Samolestostro. i tekhn. vozd. flota. Resp. mzhved. nauchno-tekhn. sb. (Aircraft Construction and the Technical Air Fleet, Republic Interdepartmental Scientific-Technical Collection), Vypusk (Issue) 21, 1970, pp 27-31 (from RZh-Mekhanika, No 12, Dec 70, Abstract No 12B353, by G. S. Aronin)

bounded from below and from above was chosen as the control parameter. Based on analysis of the calculations, it was noted that to reduce the flight noise the aircraft velocity in approaching the listening point must be increased. This method of piloting can prove very effective for aircraft with high thrust-to-load ratios.

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USSR

UDC 517.919

VALEYEV, K.G. and MISAK, V.V., Kiev

"Investigation of Vibrations of Nonlinear Systems"

Kiev, Prikladnaya Mekhanika, Vol 9, Vyp 2, Feb 73, pp 53-59

Abstract: In order to investigate the vibrations of nonlinear systems a system of differential equations of the n -dimensional vector with respect to time is set up. Solution of this system is discussed. The case of n pairs of imaginary roots is considered. A nonlinear system with two degrees of freedom is investigated, it is pointed out how to determine the stability when polar coordinates are used; conditions for the existence of stationary solutions for this system are determined.

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1/2 039
UNCLASSIFIED
TITLE--DETERMINATION OF THE STRESSED STATE OF PLANE PANEL IN THE ACOUSTIC
FIELD OF AN EXHAUST JET -U-
AUTHOR--VALEYEV, K.V.
COUNTRY OF INFO--USSR
SOURCE--PRIKLAADNAIA MEKhanika, VOL. 6, APR. 1970, P. 111-116
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--ACOUSTIC FIELD, EXHAUST GAS WAKE, STRESS ANALYSIS, FLAT PLATE,
SPECTRAL ENERGY DISTRIBUTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAme--3002/0122
CIRC ACCESSION NO--AP0127748
STEP NO--UR/0198/70/006/000/0111/0116
UNCLASSIFIED

2/2 039
CIRC ACCESSION NO--AP0127748 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- PROCESSING DATE--27NOV70
ABSTRACT. DERIVATION OF AN APPROXIMATE
FORMULA FOR CALCULATING THE PROBABILISTIC CHARACTERISTIC STRESSES AT THE
SURFACE OF A RIGIDLY CLAMPED PLANE RECTANGULAR PLATE SITUATED IN THE
ACOUSTIC FIELD OF A JET ENGINE EXHAUST. THE SPECTRAL DENSITY OF THE
ACOUSTIC LOAD IS DETERMINED FROM EXPERIMENTAL FREQUENCY SPECTRA OF THE
ACOUSTIC PRESSURE CREATED BY THE ENGINE. AN EXPERIMENTAL VERIFICATION
OF THE FORMULA IS INCLUDED. FACILITY: KIEVSKII INSTITUT
INZHENEROV GRAZHDANSKOI AVIATSII, KIEV, UKRAINIAN SSR.

UNCLASSIFIED

USSR

UDC 612.014.42

VALYEYEV, U. S., OSYENNIY, O. S., TORNUYEV, YU. V., and RAKYTYANS'KYY, D. F.,
Institute of Physiology of the Siberian Branch of the Academy of Sciences USSR,
Novosibirsk

"The Origin of the External Electric Field Which Is Recorded Around Animals
and Man"

Kiev, Fiziologichnyy Zhurnal, Vol 19, No 1, 1973, pp 99-104

Abstract: Using very sensitive electric equipment, the electric field was recorded around man and animals at a distance of 1 m. The strength of the field increases linearly with the distance decrease between the recording equipment of the animal or human body. The configuration and amplitude of the external electric field differs over different parts of the body. When the air humidity was increased to 50-85%, no electric field was recorded even at a distance of 5 cm from the man's body. The best recordings were obtained at 20-25°C and air humidity of 17-35%. Rubbing of a man's body with a cloth or bare hand increases the electric field even in the presence of high air humidity (45%). In the case of furry animals, the recorded electric field changed synchronously with respiration cycles and heart beats. No electric field was recorded around frogs, even at a distance of 0.5 cm from the body. The electric field around

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USSR

VAYEYEV, U. S., et al., Fiziologichnyy Zhurnal, Vol 19, No 1, 1973, pp 99-104
animals and man depended on respiration and heart beats. The recorded electric
field is the result of the mechanical activities of living creatures and is
not related to any electrical processes that take place in the living organism.

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VALEYEV, U.S.

Electronics

VALEYEV, U.S.

TECHNICAL TRANSLATION

FTIC-HT-23-1553-71

ENGLISH TITLE:

Measurement of Electromagnetic Fields of Infrasonic Frequencies with a Synchronous Capacitive Accumulation of Charges in the Air

FOREIGN TITLE:

Измерение электрических полей инфразвуковых частот синхронным емкостным накоплением зарядов в воздухе

AUTHOR:

U. S. Valeyev

SOURCE:

Antometriya, N° 558 No. 1, 1967, pp. 54-61

Electronics

Translated for FTIC by Leo Kanner Associates, Redwood City, CA.
(Linkin)

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USSR

VALEYEV, V. G., DANILOV, V. A.

UDC 621.391.72

"Signal Detection Against a Background of a Class of Nongaussian Noise"
Moscow, Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2192-2196

Abstract: A study was made of signal detection in the presence of correlated FM random processes. A previous effort [V. A. Loginov, Izv. AN SSSR, Tekhnicheskaya kibernetika, No 5, 1970] was made to investigate signal detection without restrictions on the degree of correlation of the interfering process; however, the conclusions of that paper are valid only in the case of noise with rigid correlation where the correlation coefficient in the observation interval is close to one. Now, the correlation properties are considered by approximating the noise signal of a single-coupled Markov series. The description of the real oscillations (nonmarkov) by simple Markov series is permissible for small values of the correlation coefficient R between the values of the series. The accuracy of this description increases with a decrease in R and is always higher than the description of the series of independent values. Quantitative relations are derived which characterize the efficiency of optimal processing by comparison with processing in a matched filter and in the system made up of an inertialess nonlinear quadrupole and a matched filter. For this purpose the effect of the correlated FM noise on the given system and on the matched filter

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USSR

VALEYEV, V. G., et al., Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2192-2196

is investigated. Graphs are plotted showing that under the conditions of correlated FM noise the optimal processing is appreciably more efficient than processing in a matched filter, and for large $R(\tau)$ the optimal processing is several times better than processing by the quadrupole-filter system.

USSR

VALEYEV, V.G.

UDC 621.391.82

"The Characteristic Of Random Noise Masking Capability"

Radiotekhnika i elektronika, Vol XVII, No 5, May 1972, pp 944-950

Abstract: It is proposed to judge the quality of masking noise by the quantity of useful information contained in a mixture of a masking signal and noise. The masking capability of noise is determined, and the effect of the nonlinear distortions of normal noise on its masking capability is evaluated. Numerical results are obtained for the following typical forms of nonlinear distortions: (1) Limitation of logarithmic character; (2) Limitation of exponential character (rigid limitation); (3) Symmetrical exponential distortions; and (4) Quadratic distortions. Graphs are presented by which it is possible to judge the effect of various nonlinear distortions of normal noise on its masking properties. 1 fig. 8 ref. Received by editors, 29 March 1971.

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- 61 -

VALEYEV, V.G.

RADAR

38: JPLS 5:43
01 June 1948

UDC 629.7.053.6.003

IV. SOME PROBLEMS OF NOISE SIGNAL DETECTION
RADAR DETECTION OF A CHARACTERIZING SIGNAL WITH
SIMULTANEOUS PROBABILITY OF ITS PRESENCE
Candidate of Technical Sciences
Institute of Physical and Mathematical Sciences Moscow 125-220

In radar, the noise detection conditions usually provide the presence of the target coordinates. Here, the time T required to obtain the end-
tution and the measurement interval T must be taken into account so that
neglect that is, $T = T_0 + T_{\text{meas}}$.

In some cases, instead of alternative detection and measurement, simulta-
neous realization of both procedures turns out to be necessary. For example,
presence of a target. Simultaneous detection and measurement periods reduction
of the analysis time of the received signal.

The synthesis of unified receivers for joint detection and measurement
is possible by using the methods discussed, for example, in reference [1].
Although these methods were developed for the detection and (or) estimation of
parameters, it is possible to use them with identical success in the problem of
observation interval. Such problems arise, in particular, when recording the
coordinates of bodies. Such problems arise, in particular, when recording the
nature of variation of the measured parameter $A(t)$ is presented in the form
of a linear combination of known functions $\varphi_i(t)$ with the random coefficients
 x_i :

$$A(t) = \sum_{i=1}^N x_i \varphi_i(t)$$

The possibility of applying the methods of reference [1] to the problem
of receiving signals with random parameters arises from the fact that the random
variable can be considered as the function value of a Markov process. The time
interval of which significantly exceeds the observation time.

VALEYEV, Y. G.

radar theory

[illegible]

UNCLASSIFIED

PROCESSING DATE--30OCT70

1/2 020

TITLE--CATALYSTS FOR THE SYNTHESIS OF UNSATURATED POLYESTERS -U-

AUTHOR--(04)--SKUBIN, V.K., KUTEPOV, D.F., VALGIN, A.D., YERYSHEV, B.YA.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMCL. SOEDIN., SER. B 1970, 12(3), 171-3

DATE PUBLISHED--70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CATALYTIC ORGANIC SYNTHESIS, POLYESTER RESIN, OLIGOMER,
POLYCONDENSATION, AMINE, HYDROXYL RADICAL, CHEMICAL REACTION MECHANISM,
CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0673

CIRC ACCESSION NO--AP0124345

STEP NO--UR/0460/70/012/003/0171/0173

UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--A00124345
ABSTRACT/EXTRACT--(U) GP-0--

UNCLASSIFIED

PROCESSING DATE--30OCT71

ABSTRACT. OLIGOMERIC POLYESTERS, WHERE R IS
ALKYL OR ARYL AND R PRIME1 IS SHOWN ON MICROFICHE, SYNTHESIZED BY
POLYCONDENSING HO SUB2 C CH:CHCO SUB2 H WITH RNH SUB2 AND HOR PRIME1 OH,
PNH SUB2 ACTS AS THE POLYCONDENSATION CATALYST (G. FODOR, 1960). THE
MECHANISM OF THE REACTION WAS DISCUSSED. THE SOLNS. OF I IN PHCH:CH
SUB2 OR TRIETHYLENE GLYCOL DIMETHACRYLATE ON ADDN. OF BZ SUB2 O SUB2
HARDENED AT ROOM TEMP. IN 10-60 MIN.

UNCLASSIFIED

1/2 018
TITLE--ACETYLENES FROM NATURAL GAS OF THE KOMSOMOL'SKOE DEPOSIT IN A
PLASMA JET -U-
AUTHOR--(02)--VALIBEKOV, YU.V., BOLOTOV, G.M.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK TADZH. SSR 1970, 13(3), 27-30
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ACETYLENE, NATURAL GAS, PLASMA JET, CHEMICAL PLANT EQUIPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/2016
CIRC ACCESSION NO--AT0112971
STEP NO--UR/0425/70/013/003/0027/0030
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2/2 018

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PROCESSING DATE--09OCT70

CIRC ACCESSION NJ--AT0112971
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE 15-KW EQUIPMENT DESCRIBED BY
 V. AND B. (1969) WAS USED. A STREAM OF 2.5-8.81.-MIN (BASED ON CH SUB4)
 OF NATURAL GAS (CH SUB4 91.4, C SUB2 H SUB6 2.14, C SUB2 H SUB4 0.06, C
 SUB3 H SUB8 0.50, ISO-C SUB4 H SUB10 0.08, N-C SUB4 H SUB10 0.17, C SUB5
 H SUB12 0.10, O 0.85, AND N 4.75 VOL. PERCENT), AFTER REACTION IN A 101.
 -MIN PLASMA JET OF AR (50-150 A) AND COOLING TO ROOM TEMP., CONTAINED:
 H, CH SUB4, C SUB2 H SUB6, C SUB2 H SUB4, C SUB2 H SUB2
 (1.03-21.2PERCENT). C SUB3 H SUB8, C SUB3 H SUB6, ISO-C SUB4 H SUB10,
 N-C SUB4 H SUB10, CH SUB2:C:CH SUB2, MEC TRIPLE BOND CH, CH SUB2:CHC
 TRIPLE BOND CH, ETC TRIPLE BOND CH, CH SUB2:CH:CH SUB2 AND HC TRIPLE
 BOND CC TRIPLE BOND CH. TOTAL C SUB2 H SUB2 CONVERSION WAS 96PERCENT AT
 AN AR:GAS RATIO OF 10:2.5 (WITH PRODUCTION OF 73-8PERCENT H).
 FACILITY: INST. KHIM., DUSHANBE, USSR.

UNCLASSIFIED

VALIDOV, M. A.

Infrared Radiation

TABLE OF CONTENTS AND FOREWORD OF A BOOK ON INFRARED FILTERS
Excerpted from a Russian-language book by M. A. Valdivov, V. G. Voznyakovich
and R. A. Valdivov; Minsk, Inzhenernyye Fil'try, Russian, 1971, pp. 1-4, 230.

Foreword

Infrared radiation is being used on a growing scale in scientific research and in practical applications. A number of monographs are devoted to this field of science and technology and its individual sections. There has been a particular increase in their number over the past two decades. Simplified methods of manufacturing of infrared filters, simplified at the same time, have still not been systematically examined. Infrared filters are used in quantum electronics, in astrophysics, chemistry, biology, and medicine. Without filters it is impossible to create a single infrared monochromator or spectrometer. High-speed methods of spectral molecular analysis are being developed on the basis of filters.

This monograph makes the first attempt to examine principles involved in the operation of various types of infrared filters, along with their spectral characteristics, and certain structural peculiarities.

The first chapter in the monograph is an introduction, contains a brief description of the spectral characteristics of sources and receivers of infrared radiation without a consideration of which it is impossible to make a correct determination of the demands made on filters utilized in various areas of the infrared spectrum. The second paragraph of the chapter contains general information about constant optical materials which are needed for an understanding of the interaction of infrared

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Abstracting Service:
CHEMICAL ABST. 5/70

Ref. Code

4R0368

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105787b Aging of interference light filters. Lazareva, L. D.;
Validov, M. A. (USSR). Zh. Prikl. Spektrosk. 1970, 12(1),
72-5 (Russ). Vacuum deposited interference light filters with
max. transmission in the 8000-A range were studied in an attempt
to improve their natural aging characteristics. Amelioration of
these characteristics was obtained by methods involving hermetic
sealing and application of surface films such as SiO₂, CeF₃, and
MgF₂. Transmission properties of filter are indicated relative
to changes in the position of max. transmission bands for filters
subjected to such treatments.
J. Beller

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